Project Design Phase
Solution Architecture

Date	30 june 2025
Team ID	LTVIP2025TMID49941
Project Name	Toycraft tales: tableau's vision into toy manufacturer data
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.
- Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
- Define features, development phases, and solution requirements.
- Provide specifications according to which the solution is defined, managed, and delivered.

Example - Solution Architecture Diagram:

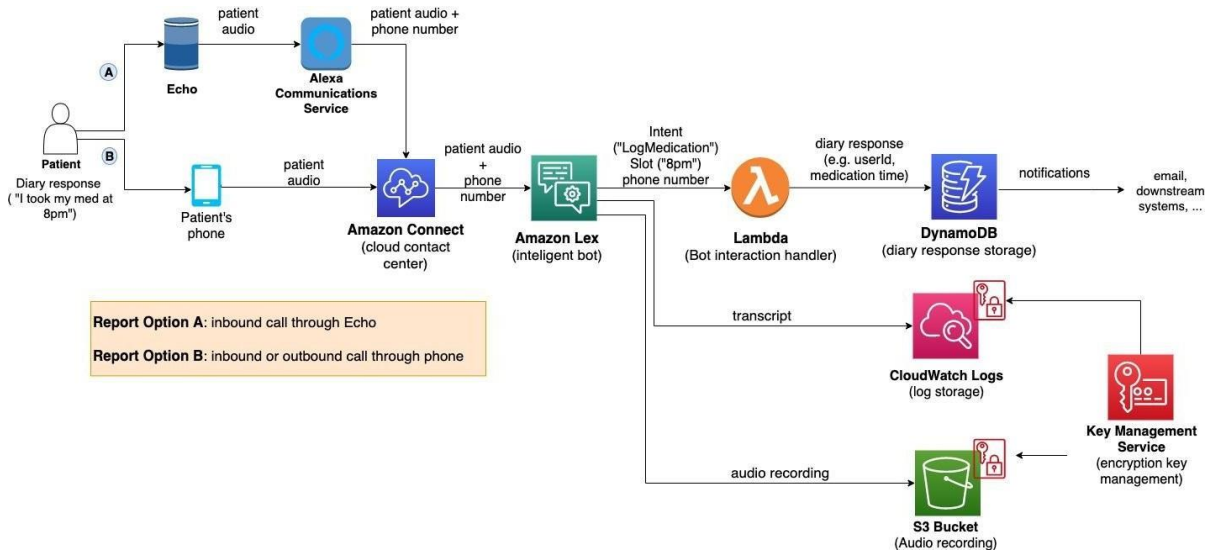

Figure 1: Architecture and data flow of the voice patient diary sample application

Solution Architecture

Solution architecture is the bridge between complex data and effective insights. For ToyCraft Tales, it ensures that toy manufacturing data is transformed into actionable business intelligence using Tableau.

Objectives:

*** Identify market trends and consumer behavior from the toy industry dataset.**

*** Provide stakeholders with insightful dashboards and KPIs.**

*** Ensure clear data flow from source to visualization.**

*** Define the tech stack, visualization layers, and deployment steps.**

*Overview:*

Our solution is an interactive *Tableau dashboard* that visualizes toy manufacturing data, highlighting product performance, demographic insights, and regional trends. The architecture is designed to deliver real-time insights in a visually appealing, easy-to-use format.

*Components of the Architecture:*

1. *Frontend (Dashboard Layer)*

*** *Technology*: Tableau Public / Tableau Desktop**

*** *Role*: Displays charts, KPIs, and filters to analyze toy trends by category, age group, region, and performance.**

*** *Hosted On*: Tableau Public**

2. *Backend (Data Processing & Transformation)*

*** *Technology*: Microsoft Excel / Google Sheets / Python (optional for preprocessing)**

*** *Role*: Cleans, filters, and prepares raw toy data for visualization.**

*** *Hosted On*: Local or cloud-based storage**

3. *Database (Dataset Layer)*

*** *Format*: CSV / Excel Files**

*** *Role*: Stores toy sales data, categories, manufacturing regions, ratings, and consumer info**

4. *External APIs (Optional Future Scope)*

*** Toy market trend APIs, or industry benchmarks for real-time comparisons**

5. *Authentication (Optional)*

*** Tableau online profiles may offer access restriction if needed**

6. *Analytics Layer (Built-in to Tableau)*

*** Filters, parameters, calculated fields, and stories that offer customized analytics**

*Example Data Flow:*

[User] → [Tableau Dashboard] → [Excel/CSV Data] → [Pre-processed in Excel/Python]

Optional: [Real-time Toy Market APIs]

*Development Phases:*

Phase	Description
Phase 1	Collect and clean toy manufacturing dataset (CSV format)
Phase 2	Analyze key fields: region, age group, sales, ratings
Phase 3	Build Tableau visualizations and filters
Phase 4	Publish dashboard on Tableau Public
Phase 5 (Optional)	Add real-time data sources and forecasting elements